GE23131-Programming Using C-2024

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Question **1**

Correct

Marked out of 3.00

⚑ Flag question

A set of N numbers (separated by one space) is passed as input to the program. The program must identify the count of numbers where the number is odd number.

Input Format:

The first line will contain the N numbers separated by one space.

Boundary Conditions:

3 <= N <= 50

The value of the numbers can be from -99999999 to 99999999

Output Format:

The count of numbers where the numbers are odd numbers.

Input:

5 10 15 20 25 30 35 40 45 50

Output:

5

Explanation:

The numbers meeting the criteria are 5, 15, 25, 35, 45.

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main()
{
    int a,count=0;
    char ch;
    do
    {
        scanf("%d",&a);
        if(a%2!=0)
        count++;
        scanf("%c",&ch);
    }
    while(ch!='\n');
    printf("%d",count);
    return 0;
```

	Input	Expected	Got	
✓	5 10 15 20 25 30 35 40 45 50	5	5	✓

Passed all tests! ✓

Question **2**

Correct

Marked out of 5.00

⚑ Flag question

Given a number N, return true if and only if it is a *confusing number*, which satisfies the following condition:

We can rotate digits by 180 degrees to form new digits. When 0, 1, 6, 8, 9 are rotated 180 degrees, they become 0, 1, 9, 8, 6 respectively. When 2, 3, 4, 5 and 7 are rotated 180 degrees, they become invalid. A *confusing number* is a number that when rotated 180 degrees becomes a **different** number with each digit valid.

Example 1:

6 -> 9

Input: 6

Output: true

Explanation:

We get 9 after rotating 6, 9 is a valid number and 9!=6.

Input: 89

Output: true

Explanation:

We get 68 after rotating 89, 86 is a valid number and 86!=89.

Example 3:

11 -> 11

Input: 11

Output: false

Explanation:

We get 11 after rotating 11, 11 is a valid number but the value remains the same, thus 11 is not a confusing number.

Note:

1.   0 <= N <= 10^9

2.   After the rotation we can ignore leading zeros, for example if after rotation we have 0008 then this number is considered as just 8.

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main()
{
    int a,b,c;
    scanf("%d",&a);
    b=a%10;
    c=b%10;
    if(b==2||b==3||b==5||b==7||c==2||c==3||c==4||c==5||c==7)
```

```
12    else
13        printf("true");
14 }
15
16
17
```

	Input	Expected	Got	
✓	6	true	true	✓
✓	89	true	true	✓
✓	25	false	false	✓

Passed all tests! ✓

Question **3**

Correct

Marked out of 7.00

⚑ Flag question

A nutritionist is labeling all the best power foods in the market. Every food item arranged in a single line, will have a value beginning from 1 and increasing by 1 for each, until all items have a value associated with them. An item's value is the same as the number of macronutrients it has. For example, food item with value 1 has 1 macronutrient, food item with value 2 has 2 macronutrients, and incrementing in this fashion.

The nutritionist has to recommend the best combination to patients, i.e. maximum total of macronutrients. However, the nutritionist must avoid prescribing a particular

macronutrients that can be prescribed to a patient, without the sum matching the given 'unhealthy' number.

Here's an illustration:

Given *4* food items (hence value: *1,2,3* and *4*), and the unhealthy sum being *6* macronutrients, on choosing items *1, 2, 3* -> the sum is *6*, which matches the 'unhealthy' sum. Hence, one of the three needs to be skipped. Thus, the best combination is from among:

·   *2 + 3 + 4 = 9*

·   *1 + 3 + 4 = 8*

·   *1 + 2 + 4 = 7*

Since *2 + 3 + 4 = 9*, allows for maximum number of macronutrients, 9 is the right answer.

Complete the code in the editor below. It must return an integer that represents the maximum total of macronutrients, modulo *1000000007 (10^9 + 7)*.

It has the following:

   n: an integer that denotes the number of food items

   k: an integer that denotes the unhealthy number

Constraints

·   *1 ≤ n ≤ 2 × 10^9*

·   *1 ≤ k ≤ 4 × 10^{15}*

The first line contains an integer, n, that denotes the number of food items.

The second line contains an integer, k, that denotes the unhealthy number.

Sample Input 0

2

2

Sample Output 0

3

Explanation 0

The following sequence of n = 2 food items:

1.   Item 1 has 1 macronutrients.

2.   1 + 2 = 3; observe that this is the max total, and having avoided having exactly k = 2 macronutrients.

Sample Input 1

2

Sample Output 1

2

Explanation 1

1. Cannot use item *1* because *k* = *1* and *sum* ≡ *k* has to be avoided at any time.
2. Hence, max total is achieved by *sum* = *0* + *2* = *2*.

Sample Case 2

Sample Input For Custom Testing

Sample Input 2

3
3

Sample Output 2

5

Explanation 2

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main()
{
    long n,k,sum=0;
    scanf("%ld %ld",&n,&k);
    for(int i=1;i<=n;i++)
    {
        sum+=i;
        if(sum==k)
        sum=sum-1;
    }
    printf("%ld",sum%1000000007);
}
```

	Input	Expected	Got	
✓	2 2	3	3	✓
✓	2 1	2	2	✓
✓	3 3	5	5	✓

Finish review